LISTING OF THE CLAIMS

The following listing, if entered, replaces all prior versions of the claims in the present application.

1.   (Currently Amended) A method comprising:

creating a first storage object corresponding to a first storage volume, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map; [[and]]

replicating said first storage volume using said first storage object, wherein said replicating comprises copying data from said first point-in-time copy of said first storage volume to a second storage volume;

creating a second storage object corresponding to said first storage volume in response to said copying;

failing over from said first storage volume to said second storage volume; and

updating said second storage volume using said first storage object and said second storage object.

2.   (Currently Amended) The method of claim 1, wherein said replicating said first storage volume comprises,

periodically replicating said first storage volume.

3.   (Currently Amended) The method of claim 1, wherein said creating a first storage object comprises[[,]] creating a~~storage object corresponding to said storage~~ ~~volume, wherein said storage object comprises~~ a virtual point-in-time copy of said first storage volume.

4.   (Canceled)

5.   (Currently Amended) The method of claim [[4]] 1, wherein said copying data from said first point-in-time copy comprises,

  synchronizing said first point-in-time copy of said first storage volume and said
  second storage volume.

6.   (Currently Amended) The method of claim [[4]] 1, wherein said copying data from said first point-in-time copy comprises,

  copying data from said first point-in-time copy of said first storage volume to a
  point-in-time copy of said second storage volume, and

  restoring said second storage volume using said point-in-time copy of said second
  storage volume.

7.   (Currently Amended) The method of claim [[4]] 1, further comprising:

  identifying a first set of one or more modified regions of said first storage volume
  using said first storage volume map.

8.   (Original) The method of claim 7, wherein said identifying a first set of one or more modified regions comprises,

  storing an extent, wherein said extent comprises a reference to a modified region
  of said first set of one or more modified regions and a length.

9.   (Canceled)

10.   (Currently Amended) The method of claim [[9]] 1, wherein said creating a second storage object comprises,

  refreshing said first point-in-time copy of said first storage volume; and

  creating [[a]] said second storage object corresponding to said first storage
  volume in response to said refreshing, wherein said second storage object
  comprises said first point-in-time copy of said first storage volume and a
  second storage volume map.

11.   (Original) The method of claim 10, further comprising,

identifying a second set of one or more modified regions of said first storage

volume using said second storage volume map.

12.   (Original) The method of claim 11, wherein said copying data from said first point-in-time copy comprises,

copying data corresponding to said first set of one or more modified regions of

said first storage volume from said first point-in-time copy of said first

storage volume to said second storage volume using said first storage

volume map.

13.   (Currently Amended) The method of claim [[9]] 1, wherein said creating a second storage object comprises,

creating a second storage object corresponding to said first storage volume

wherein said second storage object comprises a second point-in-time copy

of said first storage volume and a second storage volume map.

14.   (Original) The method of claim 13, further comprising,

identifying a second set of one or more modified regions of said first storage

volume using said second storage volume map.

15.   (Original) The method of claim 14, wherein said copying data from said first point-in-time copy comprises,

copying data corresponding to said first set of one or more modified regions of

said first storage volume from said second point-in-time copy of said first

storage volume to said second storage volume using said first storage

volume map.

16.   (Currently Amended) The method of claim [[9]] 1, further comprising:

~~detecting a failure of said first storage volume;~~

~~failing over from said first storage volume to said second storage volume in~~

~~response to said detecting;~~

creating a third storage object corresponding to a point-in-time copy of said

second storage volume; ~~and~~

~~updating said second storage volume using said first storage object and said~~
~~second storage object.~~

17.   (Original) The method of claim 16, further comprising:

resynchronizing said first storage volume with said second storage volume using
said first storage object, said second storage object, and said third storage
object.

18.   (Previously Presented) The method of claim 17, further comprising:

failing back from said second storage volume to said first storage volume.

19.   (Currently Amended) An apparatus comprising:

means for creating a <u>first</u> storage object corresponding to a <u>first</u> storage volume,
wherein said <u>first</u> storage object comprises a <u>first</u> point-in-time copy of
said <u>first</u> storage volume and a <u>first</u> storage volume map; [[and]]

means for replicating said <u>first</u> storage volume ~~using said storage object~~ <u>by</u>
<u>copying data from said first point-in-time copy of said first storage volume</u>
<u>to a second storage volume;</u>

<u>means for creating a second storage object corresponding to said first storage</u>
<u>volume in response to said copying;</u>

<u>means for failing over from said first storage volume to said second storage</u>
<u>volume; and</u>

<u>means for updating said second storage volume using said first storage object and</u>
<u>said second storage object.</u>

20.   (Canceled)

21.   (Original) The apparatus of claim 19, further comprising:

means for identifying a first set of one or more modified regions of said first
storage volume using said first storage volume map.

22.   (Canceled)

23.   (Currently Amended) The apparatus of claim [[22]] 19, wherein said means for creating a second storage object comprises,

>   means for refreshing said first point-in-time copy of said first storage volume; and
>
>   means for creating a second storage object corresponding to said first storage
>
>   volume, wherein said second storage object comprises said first point-in-
>
>   time copy of said first storage volume and a second storage volume map.

24.   (Currently Amended) A machine-readable medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to perform a method comprising:

>   creating a first storage object corresponding to a first storage volume, wherein
>
>   said first storage object comprises a first point-in-time copy of said first
>
>   storage volume and a first storage volume map; [[and]]
>
>   replicating said first storage volume using said first storage object, wherein said
>
>   replicating comprises copying data from said first point-in-time copy of
>
>   said first storage volume to a second storage volume;
>
>   creating a second storage object corresponding to said first storage volume in
>
>   response to said copying;
>
>   failing over from said first storage volume to said second storage volume; and
>
>   updating said second storage volume using said first storage object and said
>
>   second storage object.

25.   (Canceled)

26.   (Currently Amended) The machine-readable medium of claim [[25]] 24, said method further comprising:

>   identifying a first set of one or more modified regions of said first storage volume
>
>   using said first storage volume map.

27.   (Canceled)

28.   (Currently Amended) The machine-readable medium of claim [[27]] 24, wherein said creating a second storage object comprises,

refreshing said first point-in-time copy of said first storage volume; and

creating a second storage object corresponding to said first storage volume in response to said refreshing, wherein said second storage object comprises said first point-in-time copy of said first storage volume and a second storage volume map.

29.   (Currently Amended) A data processing system comprising:

a storage element to store a first storage volume; and

a volume replicator configured to[[,]]:

create a first storage object corresponding to said first storage volume, wherein said first storage object comprises a first point-in-time copy of said first storage volume and a first storage volume map; [[and]]

replicate said first storage volume using said first storage object, wherein replicating said first storage volume comprises copying data from said first point-in-time copy of said first storage volume to a second storage volume;

create a second storage object corresponding to said first storage volume in response to copying the data from the first point-in-time copy;

fail over from said first storage volume to said second storage volume; and

update said second storage volume using said first storage object and said second storage object.

30.   (Canceled)

31.   (New) The apparatus of claim 19, further comprising:

means for creating a third storage object corresponding to a point-in-time copy of said second storage volume; and

means for resynchronizing said first storage volume with said second storage volume using said first storage object, said second storage object, and said third storage object.

32.   (New) The apparatus of claim 32, further comprising:

means for failing back from said second storage volume to said first storage
volume.

33.   (New) The machine-readable medium of claim 24, said method further
comprising:

creating a third storage object corresponding to a point-in-time copy of said
second storage volume; and

resynchronizing said first storage volume with said second storage volume using
said first storage object, said second storage object, and said third storage
object.

34.   (New) The machine-readable medium of claim 33, said method further
comprising:

failing back from said second storage volume to said first storage volume.

35.   (New) The data processing system of claim 29, wherein said volume
replicator is further configured to:

create a third storage object corresponding to a point-in-time copy of said second
storage volume; and

resynchronize said first storage volume with said second storage volume using
said first storage object, said second storage object, and said third storage
object.

36.   (New) The data processing system of claim 35, wherein said volume
replicator is further configured to:

fail back from said second storage volume to said first storage volume.